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PROVISIONAL APPLICATION COVER SHEET

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This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c). Sir:

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1000	METHOD AND SY	STEM FOR ON-LINE BUS	INESSES, INCLUDING B	UT NOT LIMITED TO
131		DOVIDEDS TO ANALYZE		

TITLE OF INVENTION (280 characters max)

METHOD AND SYSTEM FOR ON-LINE BUSINESSES, INCLUDING BUT NOT LIMITED TO INTERNET SERVICE PROVIDERS TO ANALYZE PAGE CONTEXT ALL OVER THE WEB ON REAL TIME, AND IN REAL TIME MARK-UP TEXTUAL OBJECTS ON THE PAGE AND DELIVER DYNAMIC OFFERS IN REAL TIME

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Small Entity Statement

Fax (510) 843-6203 PATENT TRADEHARK OFFICE ENCLOSED APPLICATION PARTS (check all that apply)

	<u>x</u>	Drawing(s)	Number of Sheets		Other (s	specify)	
•	x	A check or r	noney order is enclosed to	cover the Provi	sional filing fees.	Provisional Filing Fee Amount (\$) <u>150</u>	
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The inventions made by an agency of the United States Government or under a contract with an agency of the United States Government. Yes, the name of the U.S. Government agency and the contract number are:

No

Respectfully Submitted SIGNATURE

Number of Pages

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DATE August 30, 2000 REGISTRATION NO. 36.988

TYPED NAME

Specification

PROVISIONAL APPLICATION FILING ONLY

U.S. PATENT APPLICATION

METHOD AND SYSTEM FOR ON-LINE BUSINESSES,
INCLUDING BUT NOT LIMITED TO INTERNET
SERVICE PROVIDERS TO ANALYZE PAGE CONTEXT
ALL OVER THE WEB ON REAL TIME, AND IN REAL
TIME MARK-UP TEXTUAL OBJECTS ON THE PAGE
AND DELIVER DYNAMIC OFFERS IN REAL TIME

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II. Background of the Invention

A. Summary of the Invention

The present invention relates to a computer method and system for enabling businesses with an online presence to offer relevant information (content, marketing opportunities, promotions, graphics, commerce opportunities, etc.) (Hereafter "the Information") to their users, based on the context of the Web page the users are on, regardless of their online location (hereafter "the Application"). The invention provides businesses with an efficient and unique method of reaching users at anytime, when browsing the web, because it allows the business to reach users that are on any web page with Information that is relevant to the context of the page that the user is on. The Application allows the business to present links 20 (Figure 1, 5, 7), Information (Figure 2, 3), and special offers 25 (Figure 2, 4) that are highly relevant to the user at that point in time, based on the context of the Web page he/she is currently viewing without the user needing to perform any active action. The Application also enables users to use their mouse or keyboard and to select (highlight) text elements (Figure 8) and submit them via the Application button on the tool bar (Figure 8) or any other button or link 35 provided by the business. Once clicking on such a button or link the selected text will be directly submitted to a pre-determined search engine on any website. If a marked object on the given web page is already a link, once the user clicks on the underline that the Application has marked, a dynamic HTML pop-up layer 40 (Figure 3) will open enabling the user to go to the destination inserted by the Application or the original link that existed on the page (Figure 6). The services which the Application can deliver include, but are not limited to, direct links (Figure 1, 6, 7) to other pages with relevant information, links that open layers with relevant information (Figure 2, 4) on the page that the user is on, layers that open automatically once the user reaches a given page and present information that is relevant to the context of the page (Figure 3), graphic and/or text promotional offers, etc. and direct submission of selected text to external search engines (Figure 8).

B. Need For the Invention

A problem that many businesses face today is that they cannot proactively reach, serve, interact, sell or make relevant offers to users while the users are outside of the businesses' Web domain (website, toolbar, email, etc.). The most severe consequence of this problem occurs when a user has an interest in products, services or Information that the business offers but the business is unaware and thus is unable to reach and serve this user. As a result, businesses miss revenue generating and/or cost savings opportunities.

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Moreover, the key for a cost effective operation is determined by the efficiency of the flow of goods, services, along the value chain from suppliers, vendors, partners or manufacturers (herein referred to as "Suppliers") through the business, and to the business's customers or users Today, a web domain is the primary online vehicle to serve a personalized, targeted flow of services and Information from the businesses to the users and customers. Businesses cannot take advantage of the World Wide Web as a platform on which they can reach and serve users with relevant Information, outside of their own Web domain.

VI. Detailed Description of the Invention

The eZula solution is the first contextual-based platform for proactive, personalized interaction without limitations to a specific domain. eZula's context-based infrastructure service is an Internet-class platform, built on a Web component architecture enabling Businesses to extend their online reach to existing Customers in more online locations than just their own Web domain and to maximize their "Proactive Presence" (PP). The Proactive Presence is defined as the volume of online contact points where a business can proactively reach, serve, sell and make offers to its Customers in a customized, personalized and targeted way across the Web. Therefore, maximizing the Proactive Presence results in greater Web-based revenues, market share and/ or a lower cost of business and also improves the flow of Services along the value chain.

eZula's platform empowers businesses to proactively respond to the contextual content on any given page that their Customers are on by marking up (including, but not limited to, underline, placing an icon/logo, highlight) pre-defined keywords or phrases on any website, turning static HTML into links that take their Customers to specific URL's, or proactively deliver dynamic, targeted and customized service via a tailor made private labeled embedded layer on the relevant page.

Businesses can take advantage of the web-based interface that is personal and secure (herein referred to as "Extranet"). The Extranet is hosted on one of the application servers in the eZula server farm. It has its own domain name (extranet.exula.com) and it is designed primarily for the businesses' line of business managers to have easy, secure access and control to the data 24/7. The three main functions that the Extranet supports

- Data upload (Figure 14)
- Data management (Figure 15)
- 3. Activity reports

Once the business manager updates data using the Extranet, the new data will be updated on the users' machines within a fixed timeframe.

As mentioned above, The Application consists of server application, client application (Figure 9) and Extranet (Figure 14). The client application holds a search engine that was

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designed and implemented by eZula. This search engine can perform multiple types of identification and matches based on a given set of data and the textual content on a given web page. The search engine operates on the user's machines utilizing some of the user's machine CPU and memory and therefore is highly scalable.

Search Engine (Figure 10)

The search engine resides on the user's machine as part of the client application. It uses data that is processed, encrypted and then sent to the client application from the server application. The business customer can update the data at any time using the Extranet. The search engine was designed to support different business requirements. There are two possible search modes:

- Keyword search the keyword (one word or more) will be identified and matched exactly as it appears in the data file.
- Fuzzy search a proximity search that finds phrases on the page that
 approximately match the given string. For example, if a supplied string was
 "SONY DVD Player DV120", the fuzzy search may find the following strings as
 possible matches depending on the parameters:
 - a. SONY DVD
 - b. SONY
 - c. DVD Playerd. DV 120

The search engine can search the document text, URL, title, Meta tags and more. Any property of the page can be used for this search.

This search engine is different from standard web search engine:

- Web search engines, look for a phrase (relatively small string) in a collection of indexed web pages.
- eZula's search engine looks for multiple phrases in the current page (usually a large string) being displayed by the browser.
- To do that the search engine uses 2 data structures (standard hash tables):
 - o One keeps the supplied strings (and their attributes)
 - Second one has only one-word keywords (extracted from the other list) that points to the IDs of the strings in the other list.

The search is conducted (Figure 10) by going over the words in the text of the current HTML, looking for those words in the keywords hash table. If one is found, we take the strings IDs of the supplied strings and try to match them (according to their attributes) in the document.

General Process (Figure 12)

An Internet user will receive the client application in the following three major methods (Figure 12 #1):

- 1. Part of the client application of business that is downloaded to user's machine.
- 2. CD that is sent to user (usually with business' software on it)
- Independent download process (not as part of another software's download process.)

eZula has developed smart download technology that downloads a thin stub very quickly to the user's machine, and then once the stub is on the user's machine, the rest of the necessary files are pulled from the eZula server farm in order to complete the installation of the software.

This process can be done in two ways:

- Download page an HTML page that has an ActiveX control that triggers the download process to the client machine.
- A small executable that invokes the download.

In both cases, the stub is being downloaded to the client machine, and then the rest of the files are downloaded in small chucks of 20K.

Once the files are all downloaded, the installation is done, automatically and silently.

Some of the application files that are on the user's machine include the indexed data for the search engine. This data is divided into display names and keywords as follows in this example:

Display name: SONY DVD Player DV120 Keywords: SONY, DVD, Player, DV120

The search engine uses the display name and keywords in order to analyze the context of the page that the user is on and to match between the current text on the page and the data provided by the business customer (Figure 9, 10). (See Search Engine detailed explanation above).

The application will start running automatically once the user opens a browser (Figure 12 #2).

While a user surfs the Web, eZula performs advanced contextual analysis to make matches between eZula's business customer-provided keywords and the content on the page (Figure 12 #3). Once a match is made, matched items (e.g. product names, keywords and phrases based on the feed that was provided by eZula's business customer) are visually marked (underline, highlight, and customer logo) according to the customer's specification (Figure 12 #4). In our example a match could be finding and underlining the string "SONY DVD" on the web page. Once the user clicks on this, he is either redirected to the exact page where information regarding SONY DVD Player DV120 (Figure 12 #5) or a pop-up layer opens next to the underline and displays the different possible matches for this string (Figure 2). One of these possible matches will be the SONY DVD Player DV120. If the user clicks on this item in the layer he or she will be redirected to that exact page.

In addition, eZula proactively inserts a dynamic HTML layer 40 onto the page (Figure 3). This layer is customized to match the business customer's brand (or its customers' brand) and it may contain either a summary of products, keywords and phrases or advertising banners and marketing messages based on the context of the page. The user can then click on the marked objects on the page and/or on linked objects within the layer, which instantaneously activates and opens another dynamic layer with more Information and

options. Alternatively, the user can be taken directly to a specific page on the customer's site or on any other pre-designated URL.

The eZula client application has an agent that "scans" the page that the user is on. The agent that scans the page passes elements from the page to the search engine that also resides in the client application. The search engine compares the page elements to a given set of data and passes relevant matches back to the agent. The agent receives this information from the search engine and performs markup of different textual objects on the page. The agent can also open a corner layer with more relevant information.

The client application consists of a main application that is always running and agents that open with each browser that the user opens. The agent waits for a download complete event from the browser (that means that the entire page completed download). Once the download complete event is fired, the agent extracts the text from the page without the HTML tags, the links, and the HTML table cells. The agent passes this to the search engine in the main application that is part of the client application. The search engine then uses a hash table mechanism in order to complete the search process (Figure 13). Once the search process is complete, the search engine passes results back to the main application, which in turn passes parameters back to the agent. The agent then marks up the textual objects on the page that were identified.

Extranet (Figures 14, 15, 16)

The extranet is a web-based application implemented with Microsoft's development tools and applications. The application utilizes Active Server Pages, COM components written in Visual Basic and Visual C++, SQL Server 7.0, HTML, Dynamic HTML, JavaScript, Design Time Controls, and different graphics. The application is hosted at the Server Farm on an Intel machine running IIS 4.0.

The Extranet application hosts secure and personal accounts for the different business customers. The business customer representative logs in and manages the data and actions for the business' community. Data can be modified (added, changed or deleted), and actions that relate to this data can be modified as well. As soon as modifications took place on the Extranet they are saved on the database and file server and within a specific time window the changes will be posted on the application servers in the eZula server farm. The next time that users of this business open their browsers the client application will check if there is new data and will update itself with the modifications.

Personalization

eZula stores a global unique identifier (GUID) number on the user's machine. The GUID is stored in the computers registry as part of unique application data. This GUID can be linked via a cross-reference table or directly in the Zula database to other systems primarily to enhance the service to the user and make it personalized. eZula will offer customers to link the data that they gather through other application with the service that eZula provides so that for example specific users will see information that is not only relevant to the page's context but also to their personal interest and past activities.

Servers and Application Architecture (Figure 13)

The eZula application (ContextPro) was designed with scalability and robustness in mind. eZula's application is a three-tier application with a COM ATL application on the client, ASP pages and server COM components in the middle tier on the server, and a SQL Server 7.0 database as the main data source (Figure 15). ContextPro was designed to allow for high numbers of users with relatively low numbers of application servers. This allows for extreme scalability since by adding several more application servers to the Server Farm, eZula can support additional millions of users. The application enjoys such great numbers since most of the work is done on the users machines; the search, markup, dynamic layers, etc. Only when the users clicks on linked objects, the request goes to the eZula application servers that in turn redirects the user to the appropriate destination. This action is under 200 bytes of data and therefore each application server can support an average of 22 such redirects per second. eZula tracks and stores all user information on its own servers, and therefore has the ability to personalize the service and use this information as input for optimizing other systems as well.

Server Farm

The server farm is a description of a group of servers that reside in a single location. Our web farm is co-located at a third party provider that provides all networking services. The servers that will reside in this location will be so called members of the eZula server farm. The servers will include but will not be limited to the following:

- Application servers processing all requests from the client application, and serving necessary information.
- Miscellaneous servers performing monitoring, backup, and maintenance tasks.
- 3. Database servers hosting the different databases
- 4. Storage servers backup, storage

Parameters |

The parameters are passed from the client to the server when the user clicks on a linkable object. A linkable object can be an underlined textual object, linkable text or graphics from the corner layer (Figure 3) or a pop-layer (Figure 2). The parameters that are passed are:

- User id unique user identification
- Display name id the unique identification number for the textual object that was identified

The parameters are passed using URL name value pairs that are appended to the URL string and are passed via HTTP protocol.

Backend Data Sources

The backend data sources include all internal and external databases, file servers, and other data sources that provide the application with the data needed to server the client applications.

These data sources will hold product information, user information, and other data that is generated by the community, provided from content providers, or stored based on user activity.

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Provisional Patent Application

- I. <u>Title</u>: Method and System for Online Businesses, including but not limited to Internet Service Providers, to analyze page context all over the web on real time, and in real time markup textual objects on the page and deliver dynamic offers in real time.
- II. <u>Inventors</u>: Assaf Henkin, Yoav Shaham, Henit Vitos, and Benny Friedman
- III. Assignee: eZula, Inc., San Francisco, California.
- IV. Drawings and Printouts:

A. Screen Printouts:



Figure 2

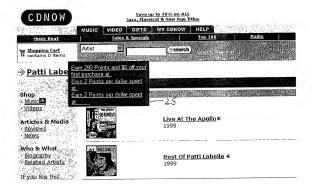


Figure 3



Figure 4







Audio System

Follow original link ShoppingList



a Track.







B. Diagrams Demonstrating the User Experience/Process Flow and application system process flow.

Figure 9

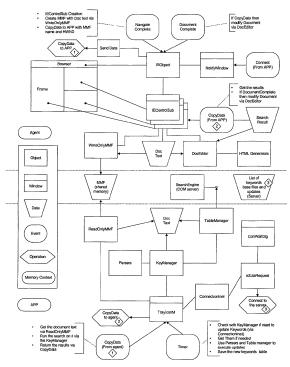


Figure 10

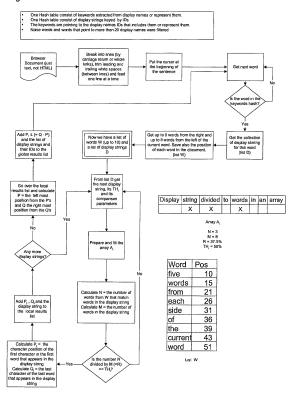


Figure 11

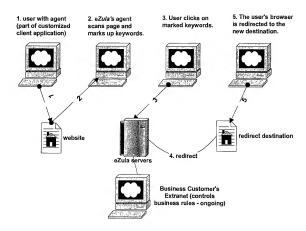


Figure 12

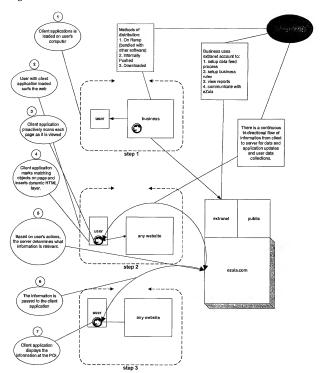


Figure 13

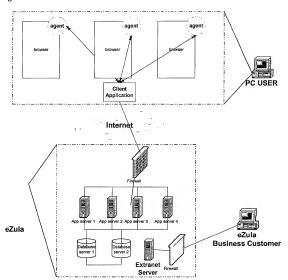


Figure 14

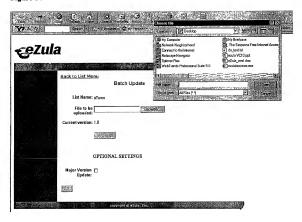


Figure 15

Delete	List Ivaine	URL Template	Save	Kdit List	Upload
C	Andrei Makarevich	www.mashina.ru	E	Eds List	Upload
	Cars	www.msn.com	D	Eds List	Upload
0	eShop	http://eshop.msn.com	0	Eds Lost	Upload
ø	eShop2	http://eshop.msn.com	a	∌	₽
E .	eYown	asdasdasd		Edst Last	Upload
0	Movies		E	Edn List	Upload
a	NewLists	http	2	۵	2
Е	the newest thing in lists III			Edit List	Upload
C	Yet another new list II		E3	Ede List	Upload
B. 3.			60		
ast Nam	Add a New List	URL Template	199		2
	Edit Your Contact Information	View eZula Contact Information			

Figure 16

Delete	DisplayString Phrase	Type	21			
D	A/V controller - 5.0	Type	15	C	Heyword.	UKL
П	A/V integrated amp - IA12	Type	1底	п	Keywerds	
П	A/V preamp digital surround decoder - Cynema Reference	Туре	14	П	Keywards	UKL
г	A/V preamp/processor - GTP-740	Type	114	Γ.	Keyword:	UE.
п	A/V preamp/processor - GTP-740DTS	Type	1 3	г	Keywords	Uk!
D	A/V preamp/tuner - AV560	Type	15	п	Leywords	URE
n	A/V preamplifier - AVP9080	Type	150	П	Leywords	URL
П	A/V precessor/controller - CL2500SSP	Type	15	П	Keywords	URI
n	A/V rectiver - @PET RP-U100	Type	119	П	Revereds	O.F.
П	A/V receiver - AGHS00	Type	1,3	п	Keyword:	URI
П	A/V Receiver - AV 711	Type	18	П	Keywords	UPJ
П	A/V receiver - AV10	Type	15	n	Keywords	UEL
Г.	A/V Receiver - AV8	Туре	18	П	Reywords	UP2
п	A/V Receiver - AVD30	Type	1.5	П	Reywords	ŪΚΙ
0	A/V Raceiver - AVDS0	Туре	186	lo	Keywords	UP)
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